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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,518	11/16/2007	Robert Bartlett Elliott	162-06	1165

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EXAMINER	
KIM, TAEYOON	
ART UNIT	PAPER NUMBER
1651	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/599,518	ELLIOTT ET AL.	
	Examiner	Art Unit	
	Taeyoon Kim	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *52-63 and 66-93* is/are pending in the application.

4a) Of the above claim(s) *52-61 and 76-88* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *62,63,66-75 and 89-93* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/5/10, 11/17/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment and response filed on 11/5/2010 has been received and entered into the case.

Claims 1-51, 64 and 65 have been canceled, claims 92 and 93 are newly added, and claims 52-61 and 76-88 are withdrawn from consideration as being drawn to non-elected subject matter. Claims 62, 63, 66-75 and 89-93 have been considered on the merits. All arguments have been fully considered.

Claim Rejections - 35 USC § 112 – New Rejection

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 62, 63, 66-75 and 89-93 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 62 discloses the new limitation directed to the non-hepatocyte cell type maintaining its cell phenotype. It is not clear what phenotype of the non-hepatocyte cell type is being maintained. Clarification is required.

Claim 69 discloses a ratio of cells of between 0.5:2 and 2:0.5 gall bladder epithelial cells:hepatocytes. It is noted that the limitation has been amended to disclose "cells of". However, it is still not clear whether what parameter this ratio is based on. It could be the number, volume, etc. of cells. Clarification is required.

Claims 90-93 are not clear what subject matter the claim intends to point out. The instant

claim utilizes the term “or” and “and” in several occasion, and also the current amendment deleted semicolons in the claim. These amendments render the claim extremely vague what would be the claimed device(s) and what components are claimed as parts of the device. It is not clear whether the “one or more implantable compositions” in the new limitation of claim 90 is considered as a separate “device” of a plasma thrombin clot or a part of any device listed. It is not clear what structural components the “device” comprises of. Clarification is required.

In addition, Claim 90-93 disclose the term “type”. M.P.E.P. §2173.05(b) states, “The addition of the word "type" to an otherwise definite expression (e.g., Friedel-Crafts catalyst) extends the scope of the expression so as to render it indefinite. Ex parte Copenhaver, 109 USPQ 118 (Bd. App. 1955). Likewise, the phrase "ZSM-5-type aluminosilicate zeolites" was held to be indefinite because it was unclear what "type" was intended to convey. The interpretation was made more difficult by the fact that the zeolites defined in the dependent claims were not within the genus of the type of zeolites defined in the independent claim. Ex parte Attig, 7 USPQ2d 1092 (Bd. Pat. App. & Inter. 1986).”

Claim 91 recites the limitation "the hepatocytes" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 90-93 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

The newly amended limitation of "differentiated" in claim 90 and its dependent claims introduces a new matter to the current application.

The newly amended limitation of claim 90 directed to the device comprising a capsule comprising a biocompatible material, a vascularized tube or chamber, or a subcutaneous implant device does not have an adequate support from the originally filed application. This limitation is interpreted that the device comprising a capsule which comprises a biocompatible material, a vascularized tube or chamber, or a subcutaneous implant. The originally filed application discloses that the capsule comprising a subcutaneous implant device. The specification (p.11, lines 6-12) discloses a capsule separately from a subcutaneous implant device.

In amended cases, subject matter not disclosed in the original application is sometimes added and a claim directed thereto. Such a claim is rejected on the ground that it recites elements without support in the original disclosure under 35 U.S.C. 112, first paragraph, Waldemar Link, GmbH & Co. v. Osteonics Corp. 32 F.3d 556, 559, 31 USPQ2d 1855, 1857 (Fed. Cir. 1994); In re Rasmussen, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981). See MPEP § 2163.06 - § 2163.07(b) for a discussion of the relationship of new matter to 35 U.S.C. 112, first paragraph. New matter includes not only the addition of wholly unsupported subject matter, but may also include adding specific percentages or compounds after a broader original disclosure, or even the omission of a step from a method. See MPEP § 608.04 to § 608.04(c). See In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976) and MPEP § 2163.05 for guidance in determining

whether the addition of specific percentages or compounds after a broader original disclosure constitutes new matter.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 62, 66-68 and 70-74 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kobayashi et al. (1991, Gastroentelogica Japonica) or Lee et al. (2003, Am J Physiol Gastrointest Liver Physiol).

The instant claim is interpreted as a composition comprising gall bladder epithelial cells.

Kobayashi et al. or Lee et al. teach a culture of human gall bladder epithelial cells (see entire documents).

The limitation directed to the intended use of the composition for implantation, this does not provide any structural limitation to the claimed product, and thus, does not provide any weight in determining patentability. M.P.E.P. § 2111.02 reads, "If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely

states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction." As such, the limitation "implantable" or "upon implantation into a recipient" does not affect the patentability of the claimed composition. Compositions are defined by their physical, structural, and chemical properties, not by an intended use or application.

With regard to the limitation directed to the intended results of "capable of secreting one or more liver secretory factors or of providing one or more liver metabolic and/or physiologic functions", it is expected that the gall bladder epithelial cell culture of Kobayashi et al. or Lee et al. would have the same property as the claimed composition. Furthermore, this property is claimed only when the composition is implanted to a recipient, and thus, the composition per se does not need the property. Nevertheless, since the references teach the same cells as the claimed composition, they would have the same property upon the intended use of implantation.

With regard to the limitations of claims 70-74, these limitations are directed to the property of the composition comprising gall bladder epithelial cells. Since the composition (co-culture) of Clement et al. comprises the same components of gall bladder epithelial cells as claimed in the current invention, it is considered that the gall bladder epithelial cells of Clement et al. possess the same property.

M.P.E.P. §2112 states that "The discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use,

new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). In In re Crish, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court held that the claimed promoter sequence obtained by sequencing a prior art plasmid that was not previously sequenced was anticipated by the prior art plasmid which necessarily possessed the same DNA sequence as the claimed oligonucleotides. The court stated that "just as the discovery of properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel."

With regard to the new limitation of "neonatal" gall bladder epithelial cells, Kobayashi et al. or Lee et al. do not particularly disclose "neonatal" gall bladder epithelial cells. However, it is considered that gall bladder epithelial cells from neonatal sources are substantially the same as any other sources at different ages since they are generally fully differentiated once gall bladder is fully formed prior to the birth, it is the Examiner's position that neonatal gall bladder epithelial cells are the same as the gall bladder epithelial cells of the references in the absence of evidence showing otherwise. Even if it is considered that these two sources are different, it would have been obvious to a person of ordinary skill in the art to try various different stages of gall bladders for the culture of gall bladder epithelial cells taught by Kobayashi et al. or Lee et al. This is because it is considered that the choice of neonatal source for the gall bladder epithelial cells is an obvious selection from the finite number of identified sources for the gall bladder epithelial cells.

With regard to the new limitation of "said non-hepatocyte cell type maintains its cell phenotype", since the subject matter of Kobayashi et al. or Lee et al. is a culture of the claimed

cells, it is expected that at least one or more of gall bladder epithelial cell phenotypes would be maintained.

Thus, the reference anticipates the claimed subject matter or alternatively the references render the claimed subject matter obvious.

Claims 62, 63, 66-68, 70-75 and 89 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Clement et al. (1984, Hepatology).

The instant claims are interpreted as a composition comprising human gall bladder epithelial cells and hepatocytes.

Clement et al. teach a co-culture system comprising hepatocyte and human gallbladder epithelial cells (p.374, last par. of left col. through 1st par. of right col.).

The limitation directed to the intended use of the composition for implantation, this does not provide any structural limitation to the claimed product, and thus, does not provide any weight in determining patentability. M.P.E.P. § 2111.02 reads, "If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction." As such, the limitation "implantable" or "upon implantation into a recipient" does not affect the patentability of the claimed composition. Compositions are defined by their physical, structural, and chemical properties, not by an intended use or application.

With regard to the limitation directed to the intended results of "capable of secreting one

or more liver secretory factors or of providing one or more liver metabolic and/or physiologic functions", it is expected that the co-culture system of gall bladder epithelial cells and hepatocytes of Clement et al. would have the same property as the claimed composition. Furthermore, this property is claimed only when the composition is implanted to a recipient, and thus, the composition per se does not need the property. Nevertheless, since the references teach the same cells as the claimed composition, they would have the same property upon the intended use of implantation.

With regard to the limitations of claims 70-74, these limitations are directed to the property of the composition comprising gall bladder epithelial cells. Since the composition (co-culture) of Clement et al. comprises the same components of gall bladder epithelial cells as claimed in the current invention, it is considered that the gall bladder epithelial cells of Clement et al. possess the same property.

The limitation of claim 89 is interpreted as the composition of gall bladder epithelial cells since there is no structural limitation directed to the device other than the composition of gall bladder epithelial cells.

With regard to the new limitation of “neonatal” gall bladder epithelial cells, Clement et al. do not particularly disclose “neonatal” gall bladder epithelial cells. However, it is considered that gall bladder epithelial cells from neonatal sources are substantially the same as any other sources at different ages since they are generally fully differentiated once gall bladder is fully formed prior to the birth, it is the Examiner's position that neonatal gall bladder epithelial cells are the same as the gall bladder epithelial cells of the references in the absence of evidence showing otherwise. Even if it is considered that these two sources are different, it would have

been obvious to a person of ordinary skill in the art to try various different stages of gall bladders for the culture of gall bladder epithelial cells taught by Clement et al.

With regard to the new limitation of "said non-hepatocyte cell type maintains its cell phenotype", since the subject matter of Kobayashi et al. or Lee et al. is a culture of the claimed cells, it is expected that at least one or more of gall bladder epithelial cell phenotypes would be maintained.

Thus, the reference anticipates the claimed subject matter or alternatively the references render the claimed subject matter obvious.

Applicant alleged that the reference does not disclose any device of claim 89. As discussed in the previous OA, the Examiner interpreted the term "device" as the same as the cell composition since there is no other structural limitation given to the device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 62, 63, 66-75 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clement et al. (supra) in view of Kobayashi et al. (2001, Addition Biology).

Clement et al. teach the limitations of claims 62, 63, 66-68, 70-75 and 89 (see above).

With regard to the ratio of hepatocyte: gall bladder epithelial cells (claim 69) in terms of

cell numbers, this limitation is considered to be optimized by routine experimentation. It is well settled that routine optimization is not patentable, even if it results in significant improvements over the prior art. In support of this position, attention is directed to the decision in In re Aller, Lacey, and Haft, 105 USPQ 233 (CCPA 1955): Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art. In re Dreyfus, 22 C.C.P.A. (Patents) 830, 73 F.2d 931,24 USPQ 52; In re Waite et al., 35 C.C.P.A. (Patents) 1117, 168 F.2d 104, 77 USPQ 586. Such ranges are termed "critical" ranges, and the applicant has the burden of proving such criticality. In re Swenson et al., 30 C.C.P.A. (Patents) 809, 132 F.2d 1020, 56 USPQ 372; In re Scherl, 33 C.C.P.A. (Patents) 1193, 156 F.2d 72, 70 USPQ 204. However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 C.C.P.A. (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 C.C.P.A. (Patents) 1248, 150 F.2d 708, 66 USPQ 308; In re Irmscher, 32 C.C.P.A. (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 C.C.P.A. (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D. C. 324, 135 F.2d 11,57 USPQ 136. (Emphasis added). With regards to determining experimental parameters, such as time in culture, the court has held that "[d]iscovery

of optimum value of result effective variable in known process is ordinarily within skill of art (In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980)).

The adjustment of particular conventional working conditions (e.g., ratio) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan having the cited reference before him/her.

Therefore, the invention as a whole would have been prima facie obvious to a person of ordinary skill at the time the invention was made.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taeyoon Kim whose telephone number is (571)272-9041. The examiner can normally be reached on 8:00 am - 5:00 pm ET (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Taeyoon Kim/
Primary Examiner, Art Unit 1651